

Effects of change in temperature and CO₂ concentration on summer groundnut in middle Gujarat- A simulation study

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ABSTRACT

The present investigation was carried out to study the impact of climate change on summer groundnut in middle Gujarat using calibrated CROPGRO-peanut model by changing maximum and minimum temperatures by -2 to +3°C and increasing concentration of CO₂ upto 550 ppm. Results revealed that with increase in maximum temperature by 3 °C, the pod yield was decreased by 39 to 48 per cent in different cultivars. The effect of minimum temperature on pod yield was less as compared to maximum temperature. The simulated pod yield increased upto 41 per cent with elevated CO₂ concentration of 550 ppm. However, if the maximum temperature was increased alongwith increase in CO₂ concentration the pod yield could be compensated upto 2 °C with CO₂ of 500 ppm, but further increasing of the maximum temperature and carbon dioxide caused decrease in the pod yield.

Key words : CROPGRO-peanut model, climate change, groundnut cultivars